REMARKS

Claims 1-3 and 12, 13, and 17 were pending in the current application. Applicants have amended claim 1. Reexamination and reconsideration of all of the claims are respectfully requested.

35 U.S.C. §112

The Office Action rejected claim 1 and claims depending therefrom based on the "such that...such that" terminology of claim 1. The Office Action contended that this passage was unclear. Applicants have amended claim 1 to clarify this language, which now recites:

> wherein the first and second conductors generate heat when passing current and are connected at a first end of the cable in series such that current can flow in both directions through the first and second conductors and when the first and second conductors are connected at a second end of the cable to an AC power supply equal currents flow in opposite directions through adjacent portions of the first and second conductors...

The Office Action rejection at page 2 questions what happens when the first and second connectors are not connected to the AC power supply. Applicants submit that the recitation of what occurs when certain conditions exist does not require, under any specific laws or under 35 U.S.C. §112, second paragraph, in particular, that the result of the converse of the condition be expressly recited in a claim. Recitation of a condition and what occurs when the condition is met is perfectly acceptable claiming. Should the Examiner continue to take issue with this and require expressly reciting what occurs when the converse of a condition occurs, Applicants respectfully request citation to a particular legal requirement for recitation of such language in a claim.

Applicants therefore submit that claim 1, as amended, is sufficiently definite and that all claims are acceptable under 35 U.S.C. §112.

35 U.S.C. §§102/103

The Office Action rejected claims 1-13, 2, 13, and 17 under 35 U.S.C. §102(b) based on U.S. Patent 4,677,281 to Mills ("Mills"), or in the alternative, under 35 U.S.C. §103 based on Sopory, U.S. Patent 6,492,629 ("Sopory")[1].

Applicants initially object to the §102 novelty rejection based on Mills because the rejection relies on another reference, namely Gordon Jr., U.S. Patent 3,222,497 ("Gordon Jr."). The Office Action at p. 3 states that an "outer insulating jacket" is purportedly shown at col. 4, line 9, of Gordon, Jr., U.S. Patent 3,222,497. The rejection is therefore relying on two references without establishing the requirements mandated by *KSR International Co. v. Teleflex Inc.*, No. 04-1350, 550 U.S. ___ (2007) and the U.S. Patent Office Examination Guidelines published in October 2007 stressing that the factual inquiries announced by the Supreme Court in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966) remain the basis for every decision regarding obviousness. According to the Examination Guidelines, patent examiners are to continue to consider (1) the scope and content of the prior art, (2) the differences between the claimed invention and the prior art, (3) the level of ordinary skill in the pertinent art, and (4) objective evidence relevant to the issue of obviousness.

The present rejection based on Mills apparently in view of Gordon Jr. fails to adhere to the requirements of KSR and the Examiner Guidelines and is improper on this basis.

With respect to novelty, Applicants discuss claim 1 with respect to Mills and briefly address Gordon Jr. herein.

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[1] The Office Action states that "Claims 1-3, 12-13 and 17 are rejected [under §102 based on] Mills or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sopory..." (Office Action, p. 2). While this implies that all claims are being rejected based on Sopory, Applicants submit that the rejections spelled out at p. 4 of the Office Action indicate Sopory is combined with Mills to reject all pending claims, and claims are not rejected based on Sopory alone.

Mills

Mills shows a single heating element 12 and a separate sensor wire 14, where sensor wire 14 is a twin core sensor cable comprising wires 15 and 16 separated by NTC (negative temperature characteristic) material 17 in FIG. 2. FIG. 3 illustrates a single heating element 12' and a PTC (positive temperature characteristic) sensor wire 14'.

Applicants have amended claim 1 to note that the first and second conductors "generate heat when passing current". To the extent the "first conductor" is believed to correspond to Mills' heating element 12 and the "second conductor" to Mills' sensor wire 14 in FIG. 2, or vice versa, Applicants note that sensor wire 14 in Mills fails to generate heat when passing current, but instead performs a sensing function ("sensor wire 14 is positioned within the blanket shell 11 ...for sensing the occurrence of an overheating condition of the heating element." Mills, col. 4, ll. 4-7). The embodiment of FIG. 3 of Mills includes PTC sensor wire 14', which also does not generate heat when passing current but instead performs a sensing function. Absence of this "generate heat when passing current" limitation from Mills indicates claim 1 is neither anticipated by Mills nor obvious based on Mills in view of Gordon Jr.

Applicants further note that nowhere in Mills is any disclosure wherein when first and second conductors are connected at a second end of a cable to an AC power supply *equal currents flow in opposite directions through adjacent portions of the first and second conductors* as required by the express language of claim 1. Equal currents do not flow in opposite directions in either of the FIG. 2 or FIG. 3 embodiments of Mills when connected to an AC power supply as claimed.

Furthermore, in FIG. 2 of Mills, sensor cable 12 and heating cable 14 are not coupled together, but are separate. In FIG. 3 of Mills sensor cable 12' and heating cable 14' are connected in parallel. Neither embodiment meets the requirement of claim 1 that the first and second conductors are "connected in series" and equal currents flow in opposite directions when connected to an AC power supply.

Additionally, Mills shows a PTC resistive component in the controller/control housing 20 (separate from heating element 12 and sensor wire 14 in FIG. 2) and an NTC material in the sensor wire 14 to control heat to the bedcover heating element. The Mills sensor wire contains an NTC material (Mills, col. 4, ll. 10-14, FIG. 2) OR a PTC resistance wire (Mills, col. 6, ll. 29-34, FIG. 3). Two different and separate circuits are given to control the sensor wire depending on whether the sensor wire contains an NTC material (FIG. 2) or a PTC resistance wire (FIG. 3).

Looking at the final limitation of claim 1, as amended, "wherein the separation layer is formed such that the separation layer has a negative temperature characteristic, and the first conductor is formed such that the first conductor has a positive temperature characteristic", Applicants note that nowhere in Mills is it suggested or explained how the two separate Mills sensing wire implementations (FIG. 2 and FIG. 3) could be combined to produce a cable or wire having the combined NTC and PTC properties claimed. The NTC circuit (FIG. 2) operates in the embodiment of FIG. 2 based on the NTC being an insulator at low temperatures. The PTC circuit (FIG. 3) relies on the PTC being a conductor at low temperatures. *The two Mills circuits are mutually exclusive*, and it is neither suggested in Mills nor apparent how a construction as claimed could be formed by using the two mutually exclusive designs of FIGs. 2 and 3 of Mills.

With respect to two mutually exlusive designs being disclosed in a single reference, Applicants note that the standard for maintaining a novelty rejection is identity of invention - in other words, the reference must disclose the claimed invention in as much detail as is recited in the claim. *See,* MPEP 2131; *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) ("The identical invention must be shown in as complete detail as is contained in the ... claim."); see also, *In re Kotzab*, 217 F.3d 1365, 1371, 55 U.S.P.Q.2d 1313, 1318 (Fed. Cir. 2000). The elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). Applicants submit that a claim that recites: 1. An apparatus comprising: A; B; C; and D is not anticipated by a reference that shows in FIG. 1 an apparatus comprising A and B, FIG. 2 an apparatus comprising A and C, and FIG. 3 an apparatus

comprising D. "Concepts do not anticipate. Notions of concept, essence, or gist are no more useful in the context of §102 [the U.S. novelty requirement] than elsewhere, because they divert the factfinder's attention from the subject matter as a whole." Harmon, Patents and the Federal Circuit, Sixth Edition, § 3.2a. "It is therefore error to treat the claims as a mere catalog of separate parts, in disregard to part-to-part relationships set forth in the claims that give those claims meaning." *Id.*

Here, identity of invention is not satisfied; the cited Mills reference does not show a design comprising a first conductor extending along a length of a cable, a second conductor extending along a length of a cable, wherein the first and second conductors generate heat when passing current and are connected at a first end of the cable in series such that current can flow in both directions through the first and second conductors and when the first and second conductors are connected at a second end of the cable to an AC power supply equal currents flow in opposite directions through adjacent portions of the first and second conductors; and wherein the separation layer is formed such that the separation layer has a negative temperature characteristic, and the first conductor is formed such that the first conductor has a positive temperature characteristic. Thus identity of invention is not satisfied, and the novelty rejection cannot be maintained.

Gordon Jr.

Regarding Gordon Jr., as noted above this reference is introduced improperly in the 102 rejection of the pending claims. Gordon Jr. discloses only the use of separate sensor and heating wires (*see, e.g.*, Gordon, Jr., col. 1, ll. 60-63). The sensor wire comprises two spirals separated by a layer of NTC material (see column 4, ll. 43-54). The limitation of "wherein the first and second conductors generate heat when passing current" is neither disclosed nor suggested by Gordon Jr., which again shows separate sensor and heating wires, and fails to show that "when the first and second conductors are connected at a second end of the cable to an AC power supply equal currents flow in opposite directions through adjacent portions of the first and second conductors..." Gordon Jr. shows no such operation.

The Office Action relies on Gordon Jr. to reject the "outer insulating jacket", citing col. 4, l. 9 of Gordon Jr. Applicants submit that Gordon Jr. in combination with Mills fails to show the invention claimed in claim 1, as amended, as both references are missing limitations in the claim.

Thus Applicants submit that claim 1 is novel in view of Mills, or Mills and Gordon Jr. Claims depending from allowable claim 1 are also novel as they include limitations not shown in the cited reference(s).

Sopory

Sopory discloses a variety of different materials (PTC, NTC, ZTC) that may be laminated onto an etched foil layer and used for heating. The Office Action seeks to combine this Sopory design with the disclosure of Mills.

Applicants first note that the PTC/NTC/ZTC design of Sopory is "laminated onto an etched foil layer," and is a fundamentally different design from that presented in the present application. Sopory, col. 2, ll. 49-52. Regarding the combination of Mills and Sopory with respect to the language of amended claim 1, Applicants argue as above that nowhere in Mills is any disclosure wherein when first and second conductors are connected at a second end of a cable to an AC power supply *equal currents flow in opposite directions through adjacent portions of the first and second conductors* as required by the express language of claim 1. Equal currents do not flow in opposite directions in either of the FIG. 2 or FIG. 3 embodiments of Mills when connected to an AC power supply as claimed, and Sopory fails to address this deficiency.

Furthermore, in FIG. 2 of Mills, sensor cable 12 and heating cable 14 are not coupled together, but are separate. In FIG. 3 of Mills sensor cable 12' and heating cable 14' are connected in parallel. Neither embodiment meets the requirement of claim 1 that the first and second conductors are "connected in series" and equal currents flow in opposite directions when connected to an AC power supply. Again, Sopory fails to cure this deficiency.

Thus Applicants submit that the combination of Mills and the fundamentally different Sopory design are missing limitations from claim 1, as amended, and for this reason claim 1 is nonobvious in view of the cited references. Claims depending from claim 1 are allowable as they include limitations not found in the cited references.

Applicants thus also dispute the combination of Mills and Sopory. It is only though the use of hindsight that a construction such as that claimed may be achieved by employing Sopory to fill in the gaps of Mills.

The PTO has the burden of establishing a prima facie case of obviousness under 35 USC §103. The Patent Office must show that some reason to combine the elements with some rational underpinning that would lead an individual of ordinary skill in the art to combine the relevant teachings of the references. *KSR International Co. v. Teleflex Inc.*, No. 04-1350, 550 U.S. ___ (2007); *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988). Therefore, a combination of relevant teachings alone is insufficient grounds to establish obviousness, absent some reason for one of ordinary skill in the art to do so. *Fine* at 1075. In this case, the Examiner has not pointed to any cogent, supportable reason that would lead an artisan of ordinary skill in the art to come up with the claimed invention.

None of the references, alone or in combination, teaches the unique features called for in the claims. It is impermissible hindsight reasoning to pick a feature here and there from among the references to construct a hypothetical combination which obviates the claims.

> It is impermissible, however, simply to engage in a hindsight reconstruction of the claimed invention, using the applicant's structure as a template and selecting elements from references to fill the gaps. [*citation omitted*]

In re Gordon, 18 USPQ.2d 1885, 1888 (Fed. Cir. 1991).

A large number of devices may exist in the prior art where, if the prior art be disregarded as to its content, purpose, mode of operation and general context, the several

elements claimed by the Applicant, if taken individually, may be disclosed. However, the important thing to recognize is that the reason for combining these elements in any way to meet Applicant's claims only becomes obvious, if at all, when considered from hindsight in the light of the application disclosure. The Federal Circuit has stressed that the "decisionmaker must step backward in time and into the shoes worn by a person having ordinary skill in the art when the invention was unknown and just before it was made." *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1566 (Fed. Cir. 1987). To do otherwise would be to apply hindsight reconstruction, which has been strongly discouraged by the Federal Circuit. *Id.* at 1568.

> To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.

W.L. Gore & Assoc. v. Garlock, Inc., 721 F.2d 1540, 1553 (Fed. Cir. 1983). Therefore, without some reason in the references to combine the cited prior art teachings, with some rational underpinnings for such a reason, the Examiner's conclusory statements in support of the alleged combination fail to establish a prima facie case for obviousness. *See, KSR International Co. v. Teleflex Inc.*, No. 04-1350, 550 U.S. ___ (2007) (obviousness determination requires looking at "whether there was an apparent reason to combine the known elements in the fashion claimed...," *citing In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness," KSR at 14).

The Office Action fails to meet this burden. Although the Office Action tries to describe how one skilled in the art would have been motivated to modify the Mills design to employ the Sopory PTC/ZTC/NTC materials laminated onto an etched foil layer, these attempts fall short.

The motivation to combine references is said to be "to protect [the] electrical circuit for the heating cable of Mills..." Office Action, p. 4. This is not a motivation to combine, but a generalized statement of the function performed by the current invention. It is disingenuous and overly simplistic to say that a combined design could "protect" an electrical circuit – the benefit of the present design, as stated in the specification, is to improve temperature control of the cable. Such temperature control protects the user. Protection of the control circuit is inapposite, and merely a general statement that could apply to any electrical device having a control circuit. Alternative designs are always desirable. However, it is dismissive and overly simplistic to say that just because a beneficial function or quality could be achieved using an alternate design that one of ordinary skill would have been motivated to create such a design. There has been no reason, with specific factual underpinnings, supporting the combination of Mills and Sopory.

The Office Action fails to avoid the effects of hindsight reasoning in fashioning the combination of Mills and Sopory, presents no reasons having rational underpinnings in support of the combination, and for these further reasons claims 1-3, 12-13, and 17 are allowable over Mills in view of Sopory.

Based on the foregoing, independent claim 1, as amended, is not obvious based on Mills in view of Sopory. All claims depending from independent claim 1, as amended, are allowable as they include limitations not found in the cited references, alone or in combination.

Applicants therefore respectfully submit that all claims, as amended, are allowable under 35 U.S.C. §§102 and 103.

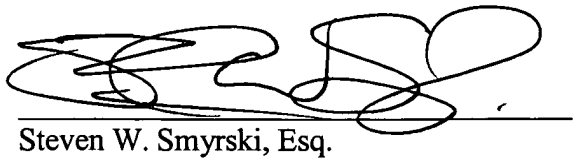
CONCLUSION

In view of the foregoing, it is respectfully submitted that all claims of the present application are in condition for search and Examination. Examination and consideration of all of the claims are respectfully requested and allowance of all the claims at an early date is solicited.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Applicants believe that no fees are required with the present response. Should it be determined for any reason an insufficient fee has been paid, please charge any insufficiency to ensure consideration and allowance of this matter to Deposit Account 502026.

Respectfully submitted,



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